

Discovery & New Frontiers Lessons Learned

APL

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The Johns Hopkins University
APPLIED PHYSICS LABORATORY

Discovery New Frontiers Missions at APL

Project	Principal Investigator	Project Scientist	Science Team Members
NEAR	None	Andy Cheng	20
CONTOUR	Joe Veverka	Joe Veverka	18
MESSENGER	Sean Solomon	Ralph McNutt	22
New Horizons	Alan Stern	Hal Weaver	27

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Issues & Lessons - 1

- Compatibility of PI & development team
 - Hands-On PI is valuable
 - Selection of senior team members need to fit style
 - Work through the process of forming, storming, norming and performing quickly!
- Tight coupling of science & engineering
 - Development team is enhanced with in-house science team members

Issues & Lessons - 2

- Buy – Off of requirements
 - Resist requirements creep!
- The Government Program Office – it can help
 - Balancing over-sight and in-sight
 - Provides a source for outside expertise on unique problems
 - Balancing the number and depth of reviews
 - Peer reviews
 - Independent Review Teams (IRT's)
 - Resolve funding issues to support
- Openness is **REQUIRED!**

Issues & Lessons - 3

- Balance process knowledge and engineering team knowledge base
 - Inheritance reviews are important
 - Don't assume!
- Integrate mission operations and I&T teams whenever possible